POWER AMPLIFER

KAC-923

SERVICE MANUAL

KENWOOD

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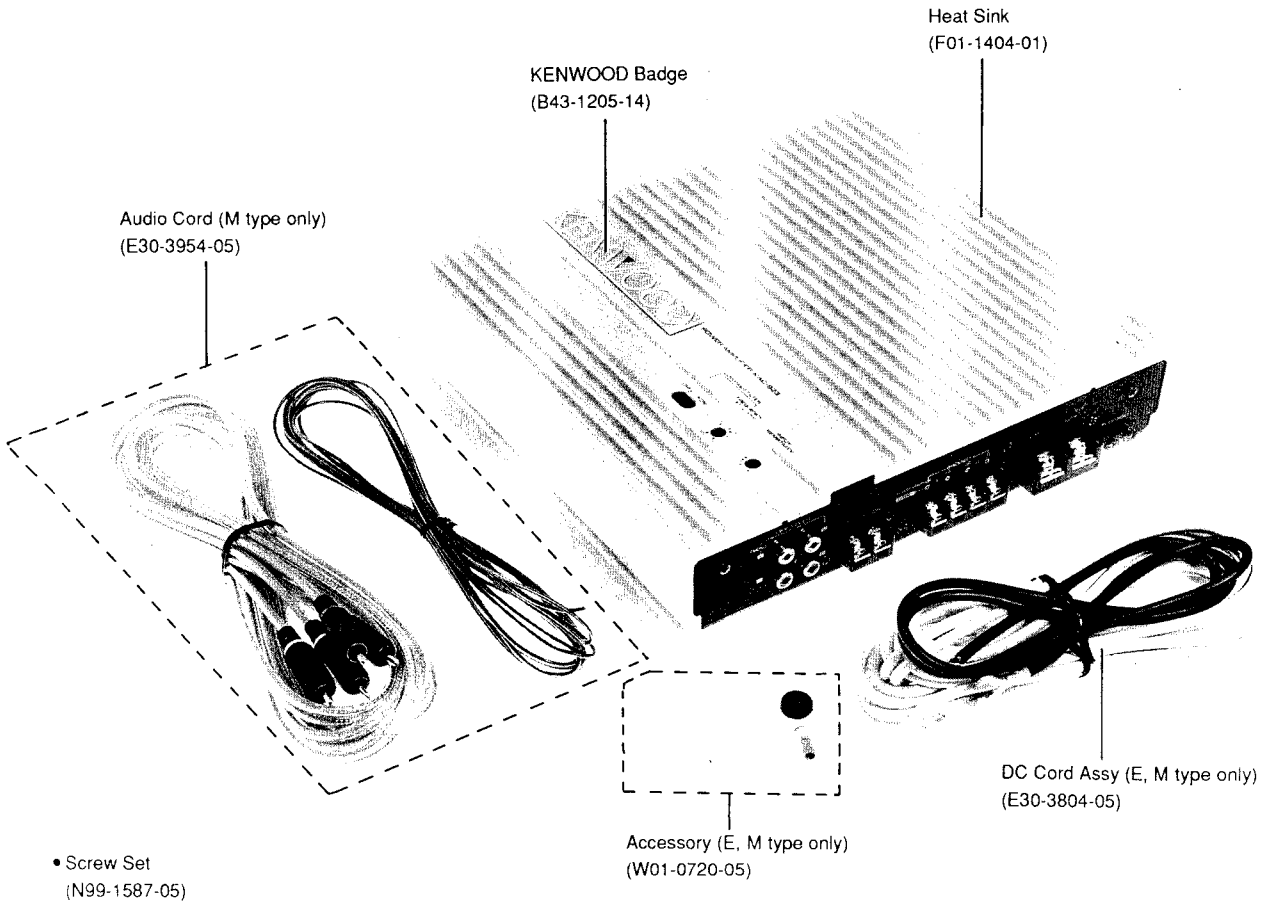
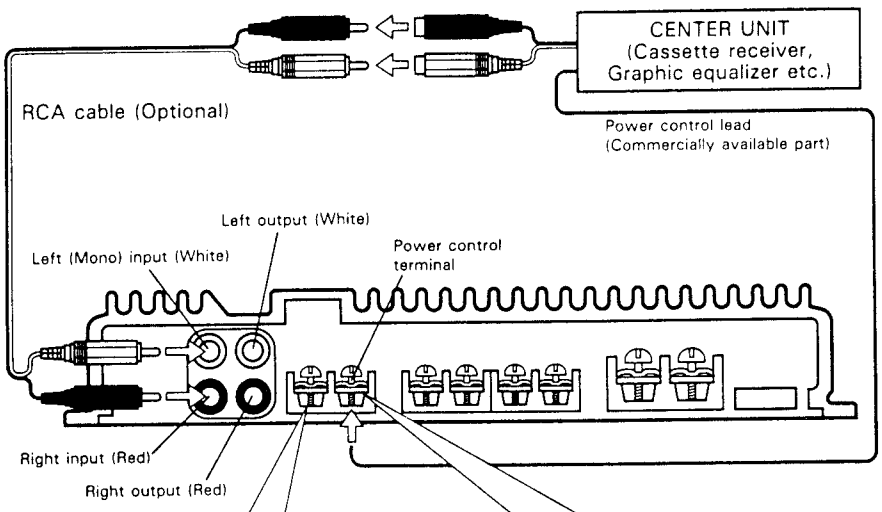
B51-6460-00 (B) 3687



Description	Parts No.	Destination		
		K type	M type	E type
Panel assy	A20-7837-03	○	○	
	A20-7838-03			○
SUB-instruction manual	B59-0707-00		○	
Instruction manual	B64-0187-00	○	○	
	B64-0188-00			○
DC cord assy	E30-3804-05		○	○
Audio cord	E30-3954-05		○	
Item carton case	H01-9428-04	○	○	
	H01-9431-04			○
Accessory	W01-0720-05		○	○
Audio unit	X09-3690-10	○	○	
	X09-3692-71			○

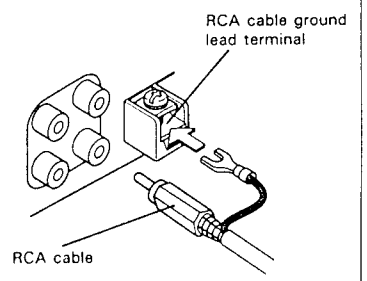
CONNECTIONS

■ System connection



RCA cable ground lead terminal

- When using an RCA cable with a ground lead attached, connect the ground lead to this terminal.

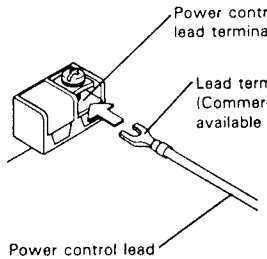


⚠ CAUTION

- Do not use this terminal for power source grounding. This unit will not operate if the power source ground wire is connected to this terminal.

Power control lead terminal

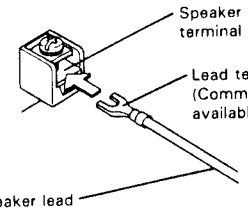
- Connect the center unit's power control lead to this terminal.



■ Speakers and Power lead connection

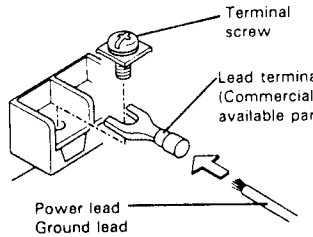
Speaker lead terminals

- Connect the speaker leads to these terminals.

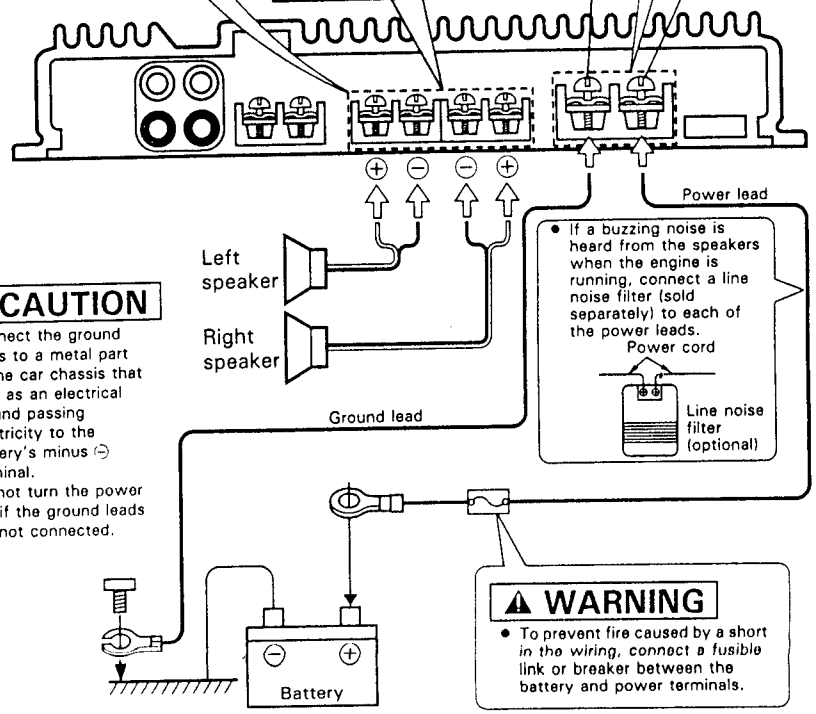


Power lead terminals

- Connect the power cord and ground cord to the corresponding terminals.



Operation switch	Speaker terminal polarity			
Stereo position	L ⊕	L ⊖	R ⊖	R ⊕
Tri-mode position	L ⊕	L ⊖	R ⊕	R ⊖
Bridged/Mono position	⊕	–	–	⊖



⚠ CAUTION

- Connect the ground leads to a metal part of the car chassis that acts as an electrical ground passing electricity to the battery's minus ⊖ terminal.
  Do not turn the power ON if the ground leads are not connected.

- If a buzzing noise is heard from the speakers when the engine is running, connect a line noise filter (sold separately) to each of the power leads.

⚠ WARNING

- To prevent fire caused by a short in the wiring, connect a fusible link or breaker between the battery and power terminals.

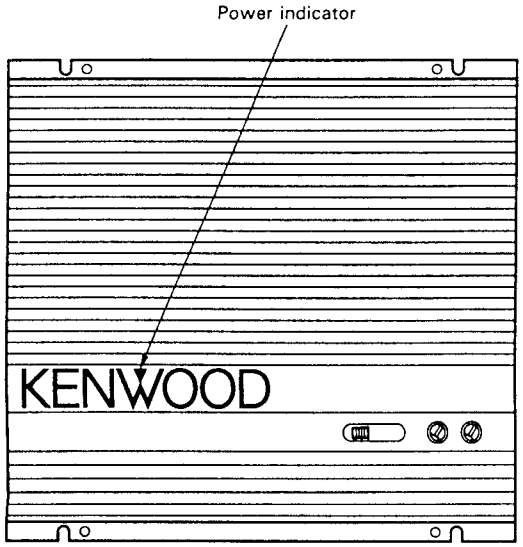
PROTECTION FUNCTION

Protection function

- This unit is equipped with a protection function for protecting this unit and your speakers from various accidents or problems that can occur.
- When the protection function activates, the unit stops operating and the power indicator lights green to indicate that the protection function is activated.

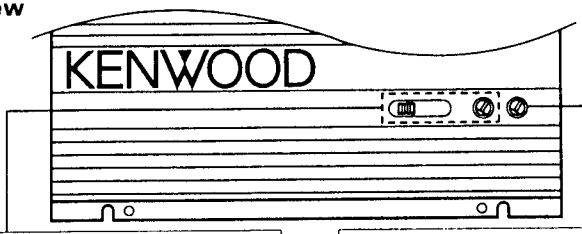
The protection function activates in the following situations:

- When a speaker output contacts ground.
- When the unit malfunctions and a DC signal is sent to the speaker outputs.
- When the temperature of internal parts exceeds 120°C (248°F). (When the temperature exceeds 80°C (176°F), the cooling fans operate to cool the unit. However, if the temperature continues to rise regardless of the cooling fan operation, the protection function will activate to shut down the unit.)
- When a ground lead of the center unit (cassette receiver, CD receiver, etc.) or this unit is not connected to a metal part serving as an electrical ground passing electricity to the battery's minus ⊖ terminal. (In this case, the power indicator does not light.)

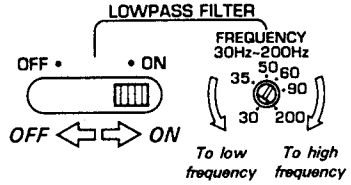


CONTROLS

■ Top view



- **Low pass filter system**
  When this switch is set to ON, this unit can be used as a dedicated low output (sub woofer) power amplifier.
  The knob on the right-hand side adjusts the maximum output frequency (low pass frequency).
  When this system is turned ON, the output of the unit becomes monaural (L + R).

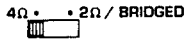


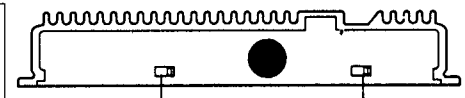
- **Input sensitivity control**
  Adjust this control according to the pre-out level of the center unit connected to this unit.

Center unit preout level	Amplifier input sensitivity
300 mV	MAX
800 ~ 1000 mV	0.3 V

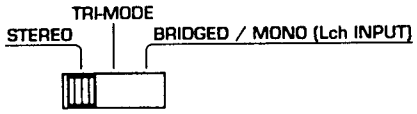
■ Side view

- **Speaker switch**
  When the impedance of connected speakers is 4 Ω, set the switch to the left. When the impedance is 2 Ω or the output is bridge type, set the switch to the right.





- **Operation switch**
  This switch can be used to configure the unit for a wide variety of applications.



STEREO position:
Set to this position to use the unit as a normal stereo amplifier.
TRI-MODE position:
Set to this position to use the unit as a stereo amplifier while at the same time obtaining a bridged output.
BRIDGED/MONO position:
Set to this position to use the unit as a monaural amplifier with a bridged output.

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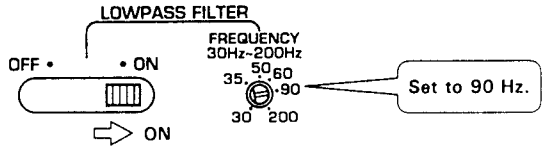
LOW PASS FILTER SYSTEM

■ SYSTEM EXAMPLE

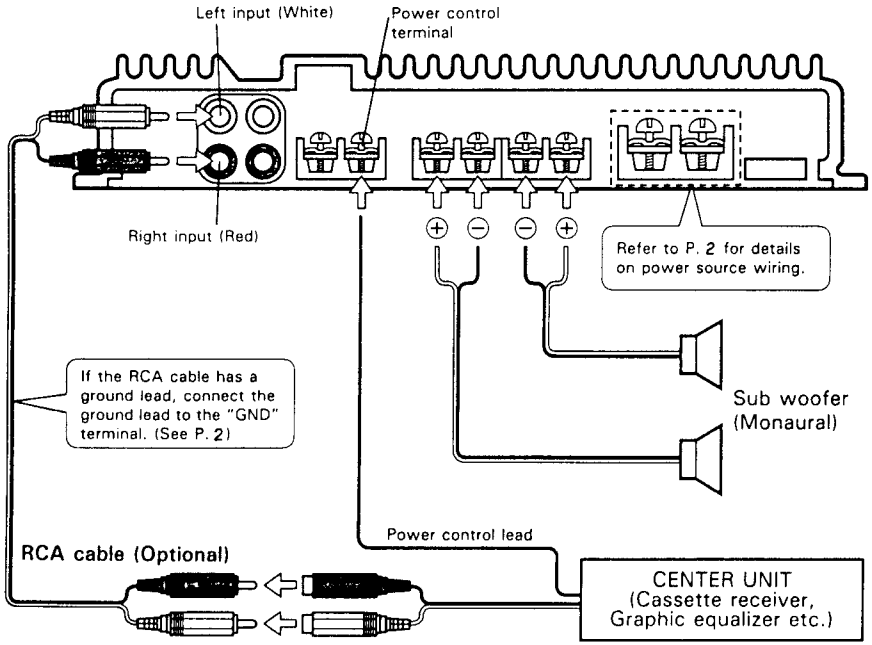
You can use the built-in low pass filter function to configure the following type of system.

- **Sub woofer system for output frequencies of less than 90 Hz.**

<Low pass filter adjustment>



<Connection>

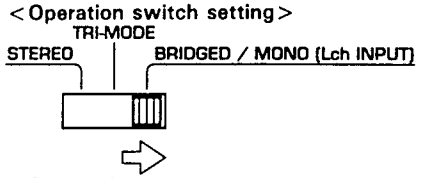

Left input (White)
Power control terminal
Right input (Red)
Refer to P. 2 for details on power source wiring.
If the RCA cable has a ground lead, connect the ground lead to the "GND" terminal. (See P. 2)
Sub woofer (Monaural)
Power control lead
RCA cable (Optional)
CENTER UNIT (Cassette receiver, Graphic equalizer etc.)

BRIDGED/MONAURAL SYSTEM

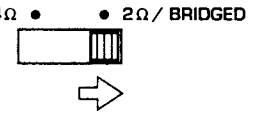
■ SYSTEM EXAMPLE

This unit can be used as a monaural amplifier by setting the operation switch to the Bridged/Mono position. This allows you to combine two units to create a high-powered sound system.

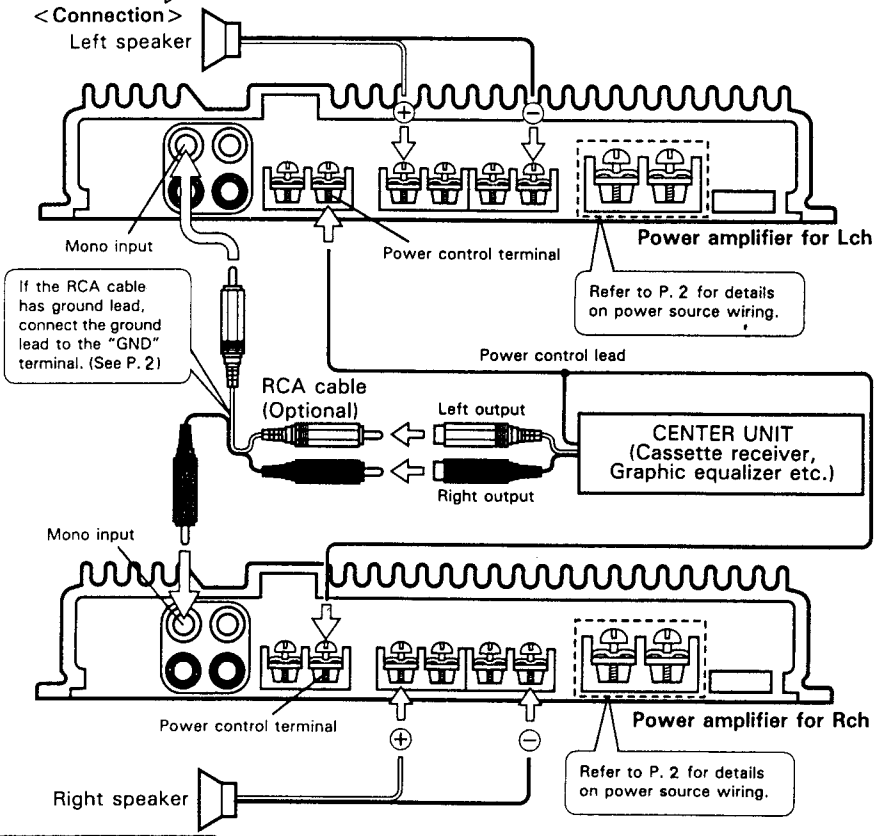
<Operation switch setting>



<Speaker switch setting>



<Connection>


Left speaker
Mono input
Power control terminal
Power amplifier for Lch
Refer to P. 2 for details on power source wiring.
If the RCA cable has ground lead, connect the ground lead to the "GND" terminal. (See P. 2)
Power control lead
RCA cable (Optional)
Left output
Right output
CENTER UNIT (Cassette receiver, Graphic equalizer etc.)
Mono input
Power control terminal
Power amplifier for Rch
Refer to P. 2 for details on power source wiring.
Right speaker

⚠ CAUTION

- Be sure that the combined impedance of your speaker system as seen from the KAC-923/823 is at least 2 ohms. An impedance of less than 2 ohms will damage the amplifier.

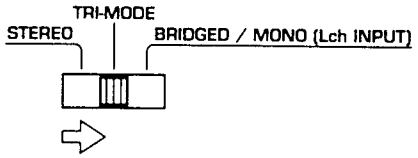
KAC-923

TRI-MODE

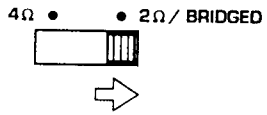
By setting the switch to the Tri-mode position, you can obtain a stereo output and a bridged output at the same time, allowing you to connect both a pair of normal stereo speakers and a woofer.
This setup enables you to use the frequency cut-off characteristics of coils and capacitors (see below) to configure your own multi-way speaker system.

- **Coil (L): Passes low frequencies and blocks high frequencies. (Low pass)**
- **Capacitor (C): Passes high frequencies and blocks low frequencies. (High pass)**

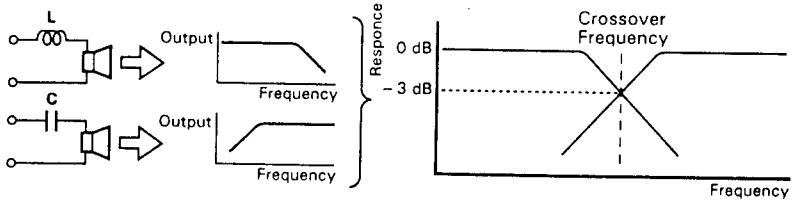
<Operation switch setting>



<Speaker switch setting>



■ 6dB/octave for High and Low pass filter



■ Table of content for 6dB

Cross over frequency	Speaker impedance			
	2 ohm		4 ohm	
	L (Coil)	C (Capacitor)	L (Coil)	C (Capacitor)
80 Hz	4.0 mH	1000 μF	8.0 mH	500 μF
100 Hz	3.2 mH	800 μF	6.4 mH	400 μF
150 Hz	2.1 mH	530 μF	4.2 mH	270 μF
200 Hz	1.6 mH	400 μF	3.2 mH	200 μF

- If the coils and capacitors are not available in the values listed, coils and capacitors with similar or close values can be used without affecting the performance in practical use.
- Coils and capacitors not listed in the above table can be determined using the following formulas.

$$C = \frac{159000}{fc \times R}\ (\mu F) \qquad L = \frac{159 \times R}{fc}\ (mH)$$

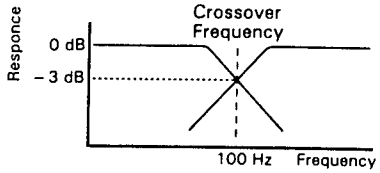
fc = Cut of Frequency (Hz) R = Speaker Impedance (Ω)

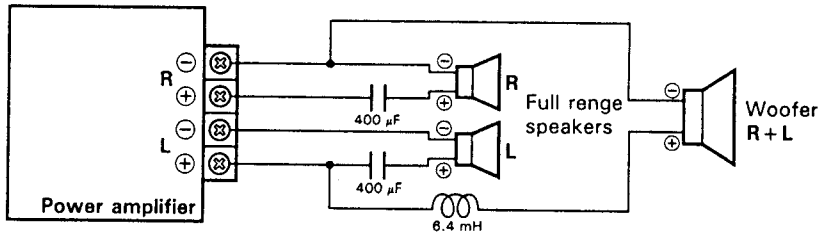
■ SYSTEM EXAMPLE

- 2 way speaker system
- Use 4 ohm speakers.
- 6dB/oct. slope
- Full range speaker: 100 Hz or more
- Woofer: 100 Hz or less

From the table on the previous page, the coil and capacitors required for the above system are as follows:

- Capacitors for full-range speakers : 400 μF (Withstand voltage: 50 V or more)
- Coil for woofer : 6.4 mH (Current capacity: 5 A or more)





⚠ CAUTION

- Be sure that the combined impedance of your speaker system as seen from the KAC-923/823 is at least 2 ohms. An impedance of less than 2 ohms will damage the amplifier.

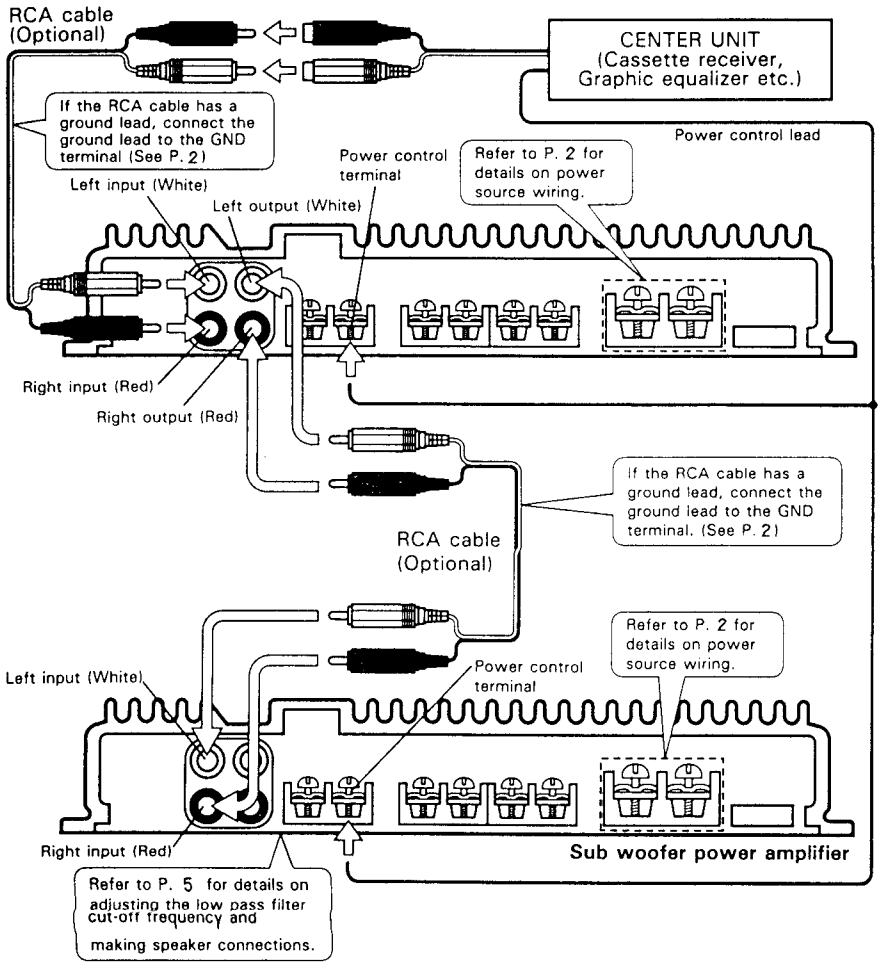
USING THE RCA LINE IN AND OUT TERMINALS

There are times when you may want to add another power amplifier to your system for expansion purposes such as driving a sub woofer. This unit is equipped with a line output which makes it easy to add another power amplifier to your system.

■ SYSTEM EXAMPLE

- Two amplifiers are used in the system, with one used as a normal stereo power amplifier and the other used as a sub woofer power amplifier.

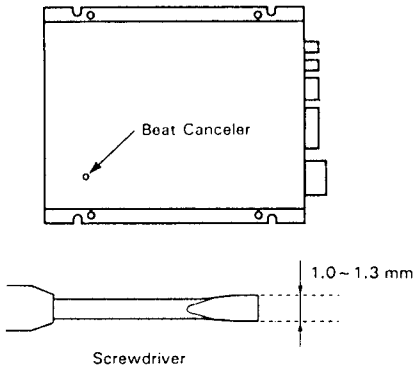
<System connection>


RCA cable
(Optional)
CENTER UNIT
(Cassette receiver,
Graphic equalizer etc.)
If the RCA cable has a ground lead, connect the ground lead to the GND terminal (See P. 2)
Power control lead
Power control terminal
Refer to P. 2 for details on power source wiring.
Left input (White)
Left output (White)
Right input (Red)
Right output (Red)
If the RCA cable has a ground lead, connect the ground lead to the GND terminal. (See P. 2)
RCA cable
(Optional)
Refer to P. 2 for details on power source wiring.
Left input (White)
Power control terminal
Right input (Red)
Sub woofer power amplifier
Refer to P. 5 for details on adjusting the low pass filter cut-off frequency and making speaker connections.

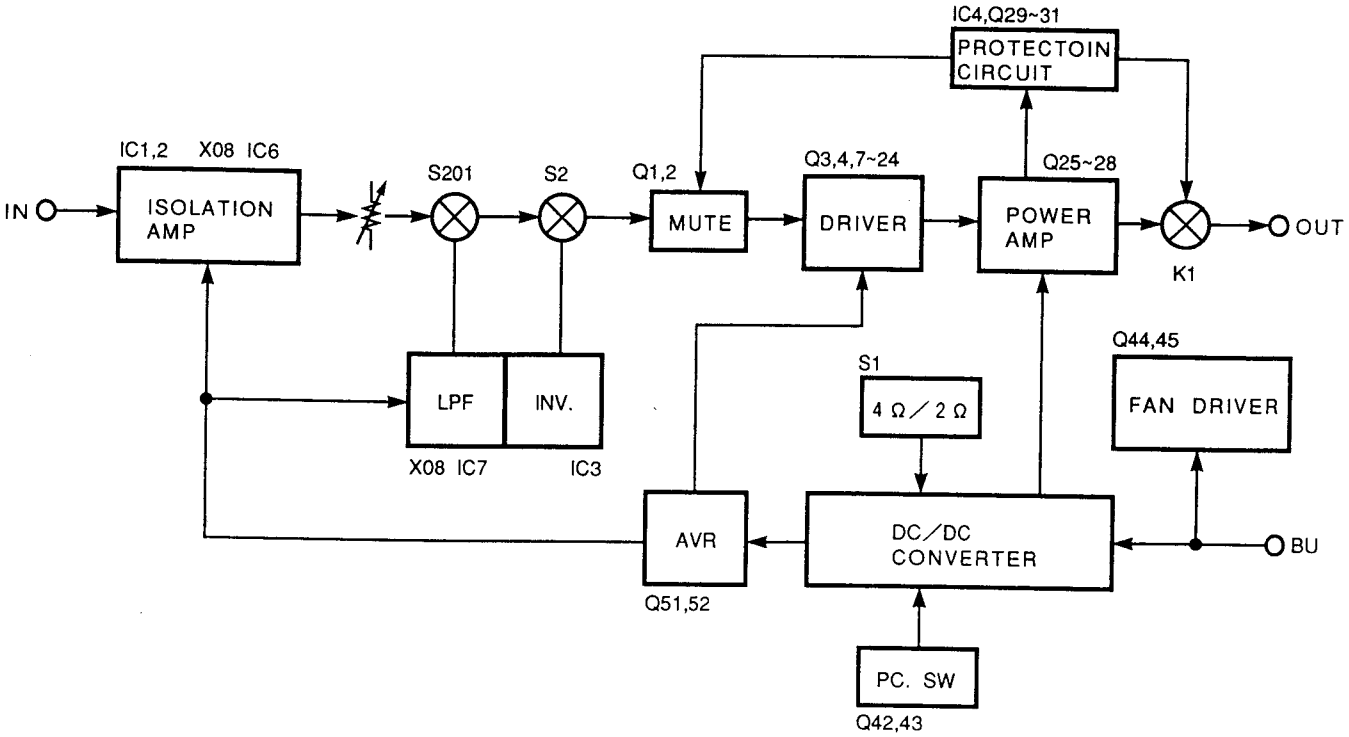
<Refer to P. 2 for details on power lead connections.>

TROUBLESHOOTING GUIDE

What often appears to be a malfunction is often due to user error in operation or connection. When trouble occurs with your unit, please check the following before calling for service.

Symptom	Cause	Remedy
No sound. (No sound from one side.)	A speaker cord has become unconnected.	Check the speaker cord connections.
The sound quality is bad. (The sound is distorted.)	1. The speakers are connected to the same wires. 2. A speaker cord is pinched by a screw in the car body.	1. Connect each speaker terminal to its respective speaker output. 2. Check the speaker wiring.
Beat noise is heard when listening to AM radio broadcasts.	Use a screwdriver to adjust the "Beat Canceler" on the bottom of the unit. 	

BLOCK DIAGRAM



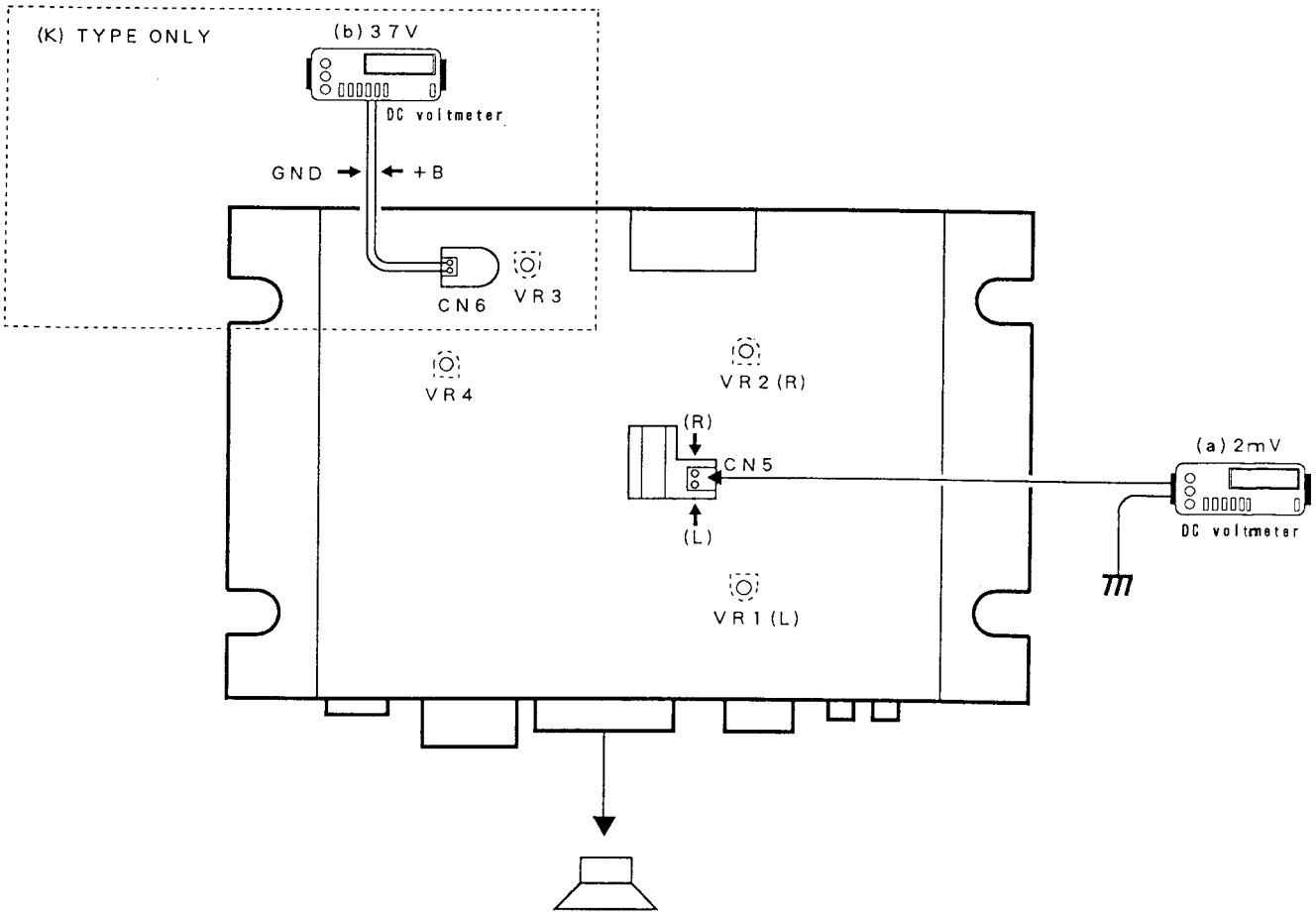
DESCRIPTION OF COMPONENTS

Audio Unit (X09-369X-XX) (incl. X08-2540-10)

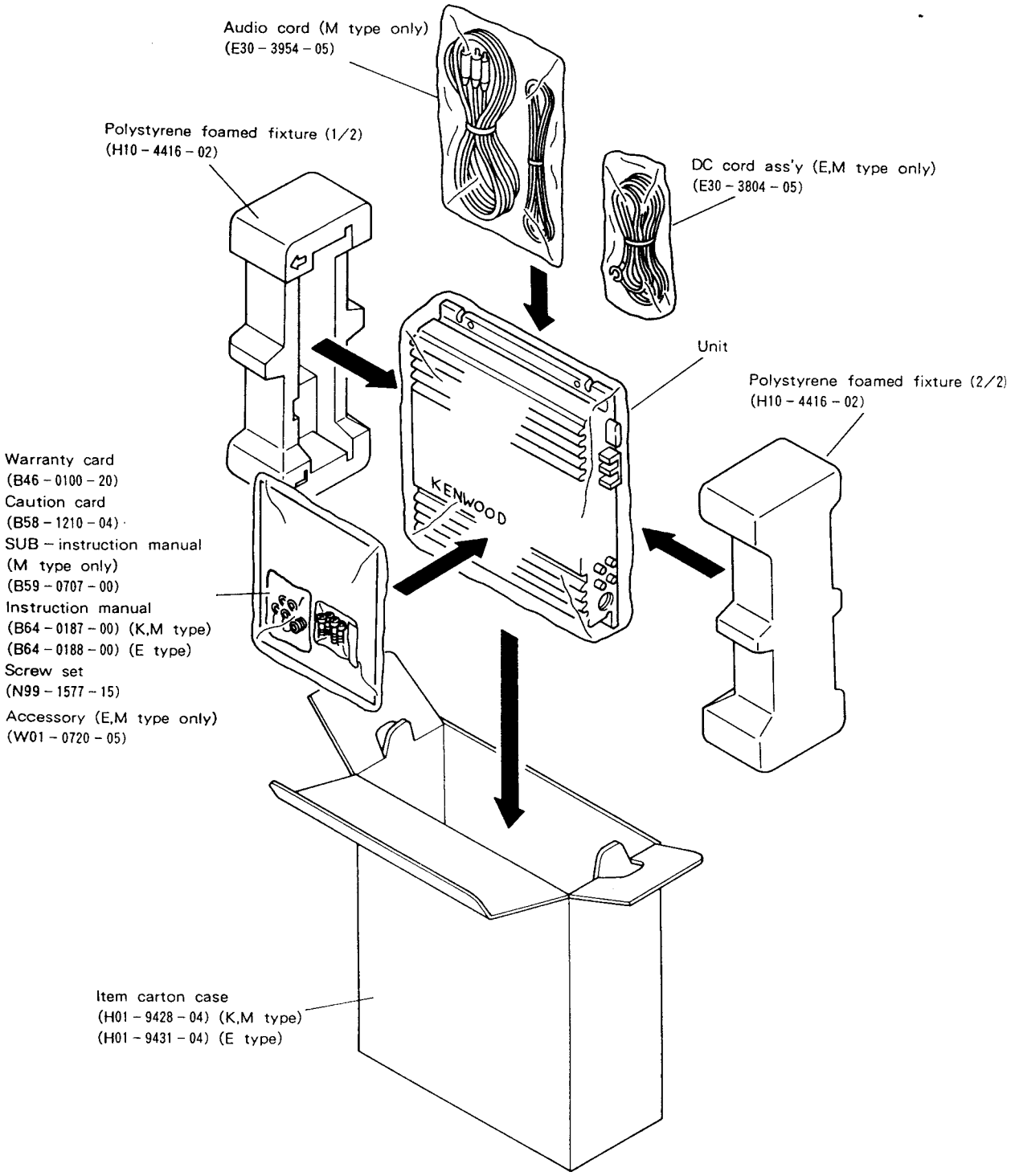
Reference No.	Reference Name	Function	Description
IC1, 2, 6 (IC6 is on X08-2540-10)	NPC4570C	Isolation amplifier	Eliminates noise from automobile entering the amplifier input.
IC3	NJM4558D	Inverter	Inverter for bridge circuit.
IC4	µPC1237HA	Protection	Detects overload, DC offset and P.CON.
IC5	µPC494C	Switching regulator	Oscillator for DC/DC converter. (PWM control with 0-10 destination model.)
IC7 (IC7 is on X08-2540-10)	NJM4558D	LPF	LPF for sub-woofer.
Q1, 2	2SC945 (A) (Q, P)	Input muting	Protects the relay contact by functioning at an earlier timing than the relay when the amplifier is turned ON or OFF.
Q3, 4	2SK389	Input differential amplifier	Determines the amplifier gain based on the input signal applied to one input and negative feed back applied to the other input.
Q7 to 10	2SA992 (F, E)	Second-stage differential amplifier	
Q15, 16	2SC2631 (Q, R)	Cascode stage	
Q17, 18	2SA1123 (Q, R)	Current mirror	Load to cascode stage of the differential amplifier.
Q19, 20	2SC3419	Temperature compensation	
Q21, 22	2SC2590 (Q, R)	Power amplifier drive	
Q23, 24	2SA1110 (Q, R)		
Q25, 26	2SC4886	Power stage	
Q27, 28	2SA1860		
Q29, 30	2SC1845 (F, E)	Current detector	Detects over-current and controls IC4.
Q31	2SA992 (F, E)		
Q32 to Q37 Q55, 56	IRFIZ34	Switching power stage	
Q38, 39	2SC945 (A) (Q, P)	Switching driver	
Q40, 41	2SA733 (A) (Q, P)		
Q42	2SA1534A (R, S)	Power switch	Supplies power to IC5.
Q43	2SC945 (A) (Q, P)	P.CON "ON" detector	
Q44	2SA733 (A) (Q, P)	Fan drive	Detects temperature using TH3 and activates the fan.
Q45	2SC3940A (R, S)		
Q46, 47 (X08-2540-10)	2SA1561	Operation indicator driver	When Q46 is ON, the amplifier is in the protection mode. When Q47 is ON, the amplifier is in the operation mode.
Q51	2SD1266BD (Q, P)	AVR	120V regulated voltage.
Q52	2SB941BD (Q, P)		

ADJUSTMENT

No.	ITEM	INPUT SETTINGS	OUTPUT SETTINGS	RECEIVER SETTINGS	ALIGNMENT POINTS	ALIGN FOR	FIG.
Connect a cassette receiver, etc.							
1	IDLE CURRENT	–	Connect a DC voltmeter to CN5	Volume: 0	VR1(L) VR2(R)	After sufficient aging, adjust to 2mV	(a)
2	BEAT CANCELER	–	–	Receive an AM station.	VR4	Only in case beat noise is heard, adjust to minimize it.	
K TYPE ONLY							
3	SUPPLY VOLTAGE	Set S1 to the 4-ohm position.	Connect a DC voltmeter to CN6	Volume: 0	VR3	Adjust to 37V.	(b)

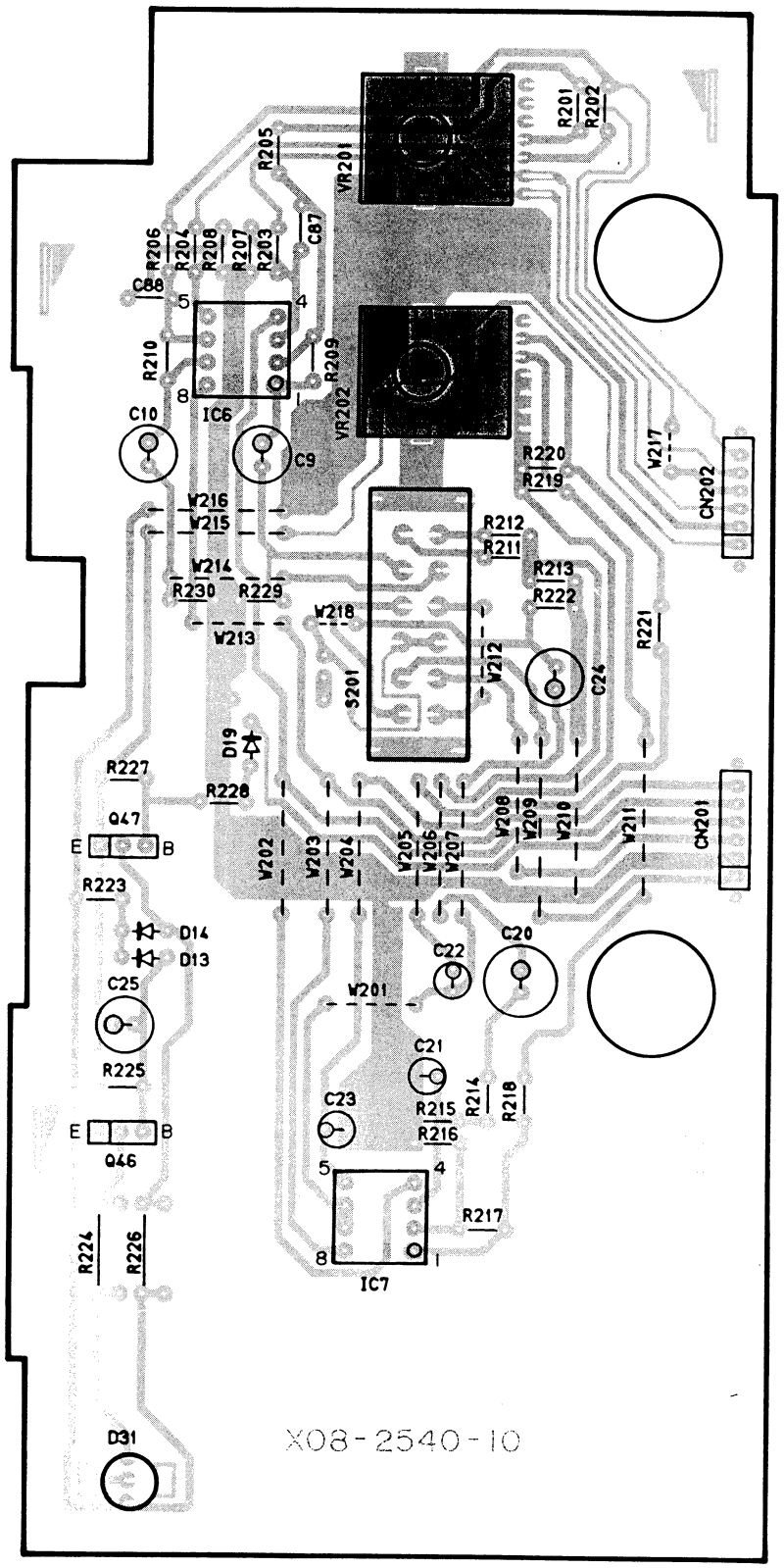


PACKING


Audio cord (M type only)
(E30 – 3954 – 05)
Polystyrene foamed fixture (1/2)
(H10 – 4416 – 02)
DC cord ass'y (E,M type only)
(E30 – 3804 – 05)
Unit
Polystyrene foamed fixture (2/2)
(H10 – 4416 – 02)
KENWOOD
Warranty card
(B46 – 0100 – 20)
Caution card
(B58 – 1210 – 04)
SUB – instruction manual
(M type only)
(B59 – 0707 – 00)
Instruction manual
(B64 – 0187 – 00) (K,M type)
(B64 – 0188 – 00) (E type)
Screw set
(N99 – 1577 – 15)
Accessory (E,M type only)
(W01 – 0720 – 05)
Item carton case
(H01 – 9428 – 04) (K,M type)
(H01 – 9431 – 04) (E type)

PC BOARD (Component side view)

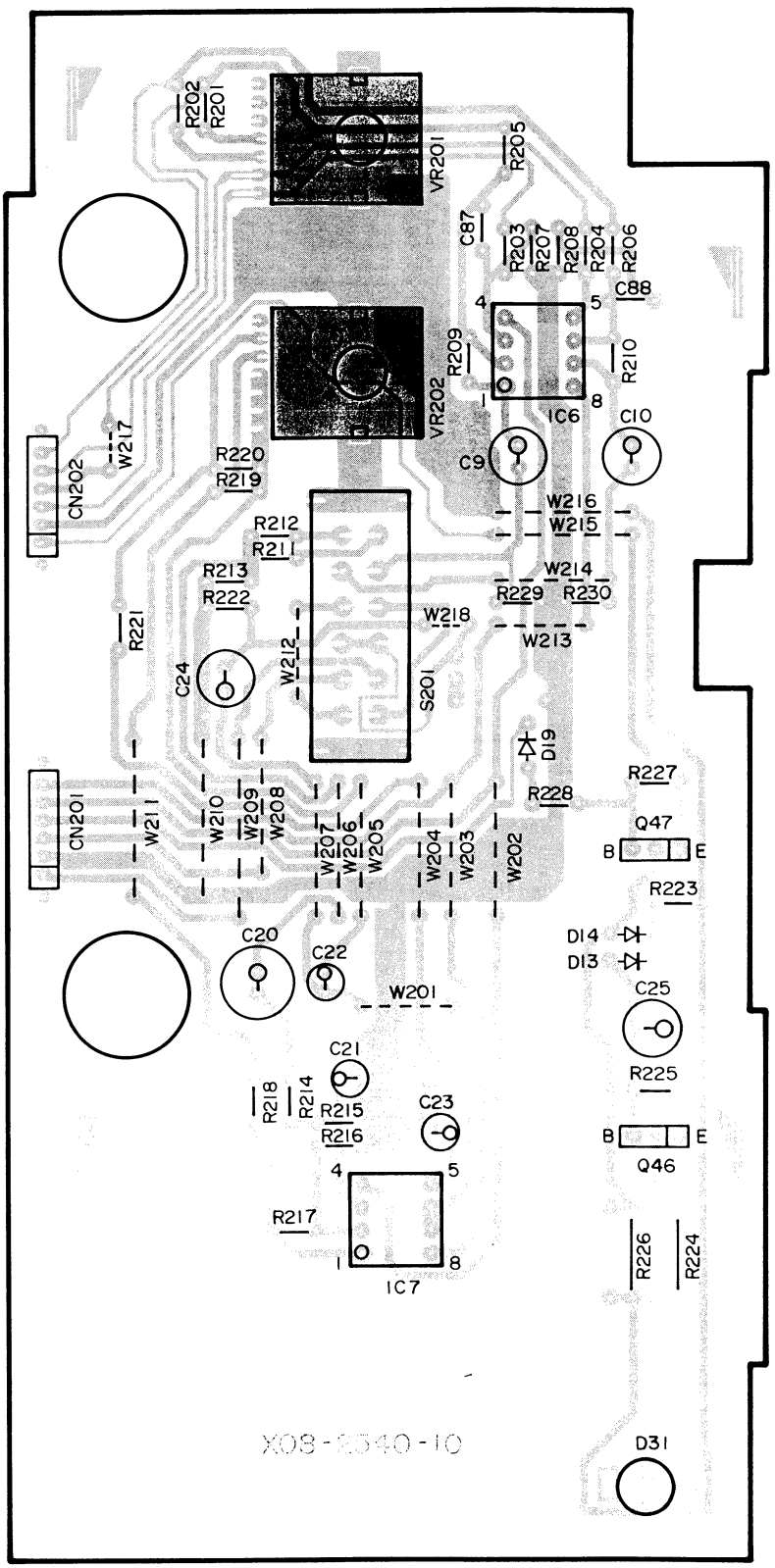
Preamplifier unit (X08-2540-10)



Refer to the schematic diagram for the values of resistors and capacitors.

PC BOARD (Foil Side View)

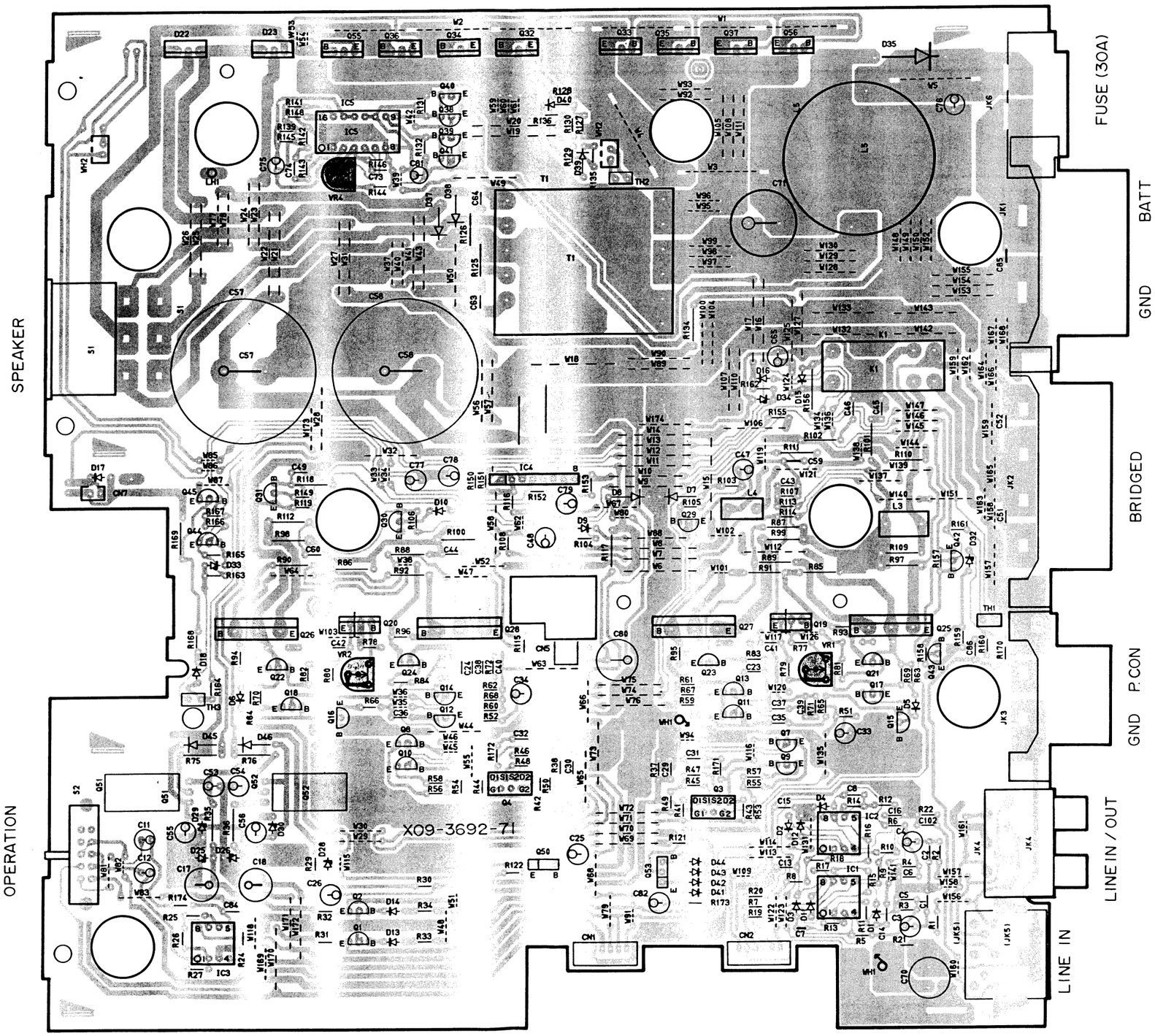
Preamplifier unit (X08-2540-10)



Refer to the schematic diagram for the values of resistors and capacitors.

PC BOARD (Component side view)

Audio unit (X09-3692-71) E TYPE



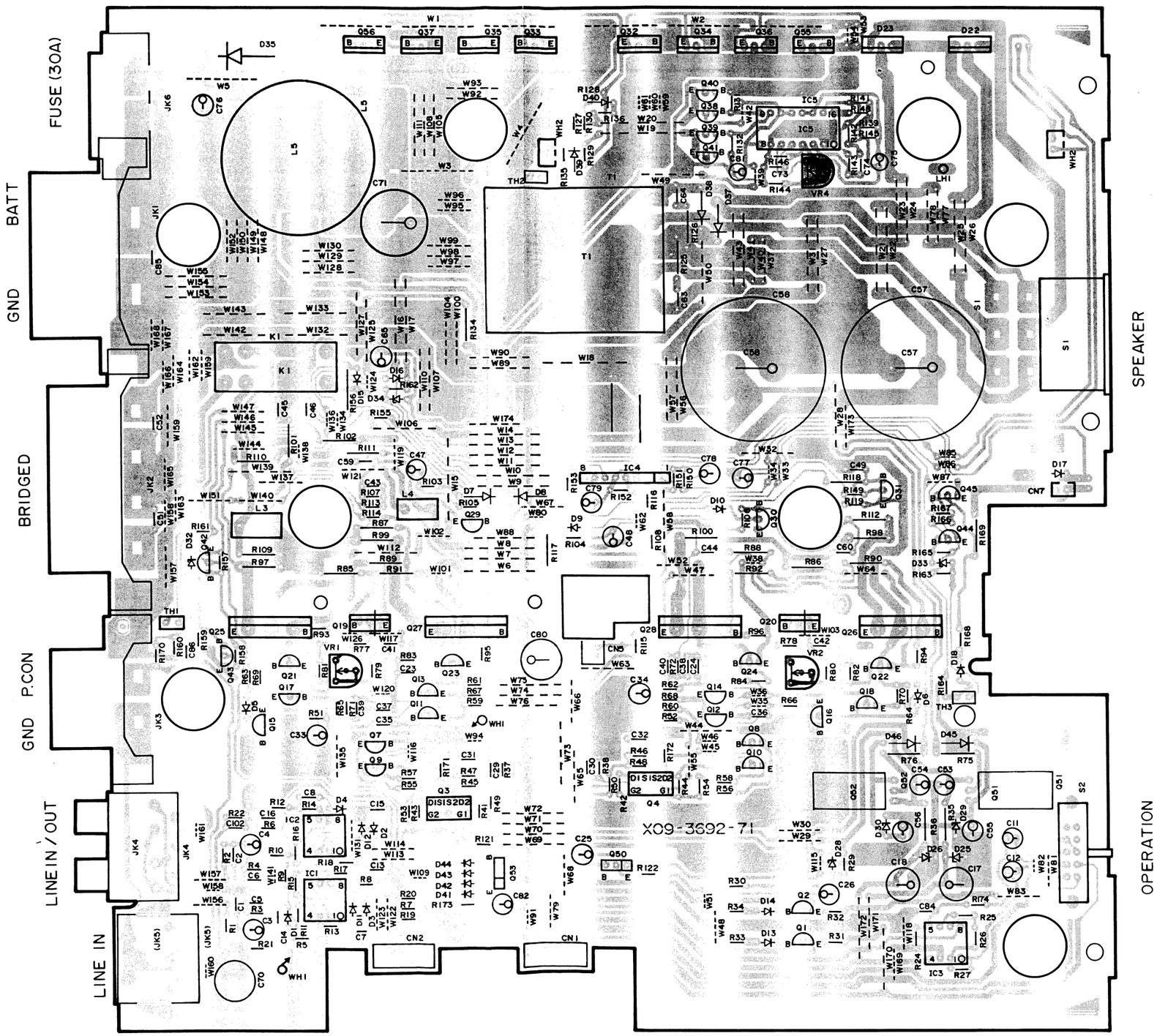
Ref. No.		Address
IC	Q	
	1	6D
	2	6D
	3	6F
	4	5E
	7	5G
	8	5E
	9	5G
	10	5E
	11	5F
	12	5E
	13	5F
	14	5E
	15	5G
	16	5D
	17	5G
	18	5D
	19	5G
	20	5D
	21	5G
	22	5D
	23	5F
	24	5E
	25	5G
	26	5D
	27	5F
	28	5E
	29	4F
	30	4E
	31	4C
	32	1E
	33	1F
	34	1E
	35	1F
	36	1E
	37	1F
	38	2E
	39	2E
	40	2E
	41	2E
	42	4H
	43	5H
	44	4C
	45	4C
	50	6E
	51	6C
	52	6D
	53	6F
	55	1D
	56	1G
1		6G
2		6G
3		7D
4		4E
5		2D

Refer to the schematic diagram for the values of resistors and capacitors.

PC BOARD (Foil Side View)

Audio unit (X09-3692-71) E TYPE

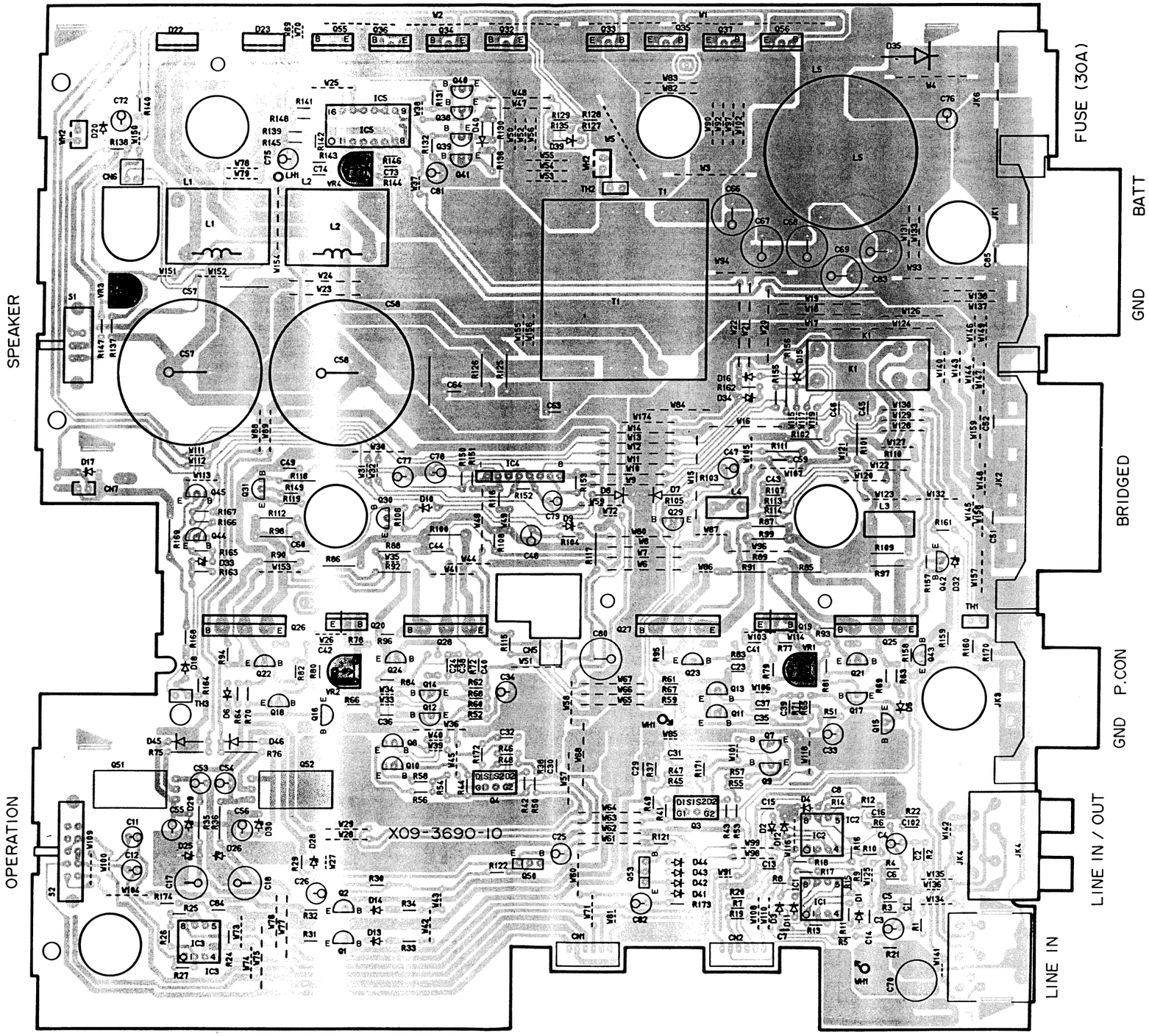
Ref. No.		Address
IC	Q	
	1	6Q
	2	6Q
	3	6O
	4	6P
	7	5O
	8	5Q
	9	5O
	10	5Q
	11	5O
	12	5Q
	13	5O
	14	5Q
	15	5N
	16	5Q
	17	5N
	18	5Q
	19	5O
	20	5Q
	21	5N
	22	5R
	23	5O
	24	5Q
	25	5N
	26	5Q
	27	5O
	28	5P
	29	4O
	30	4Q
	31	4R
	32	1P
	33	1P
	34	1Q
	35	1O
	36	1Q
	37	1O
	38	2Q
	39	2Q
	40	2Q
	41	2Q
	42	4N
	43	5N
	44	4R
	45	4R
	50	6P
	51	6R
	52	6Q
	53	6O
	55	1Q
	56	1O
1		6N
2		6N
3		6R
4		4P
5		2Q



Refer to the schematic diagram for the values of resistors and capacitors.

PC BOARD (Component side view)

Audio unit (X09-3690-10) K, M TYPE



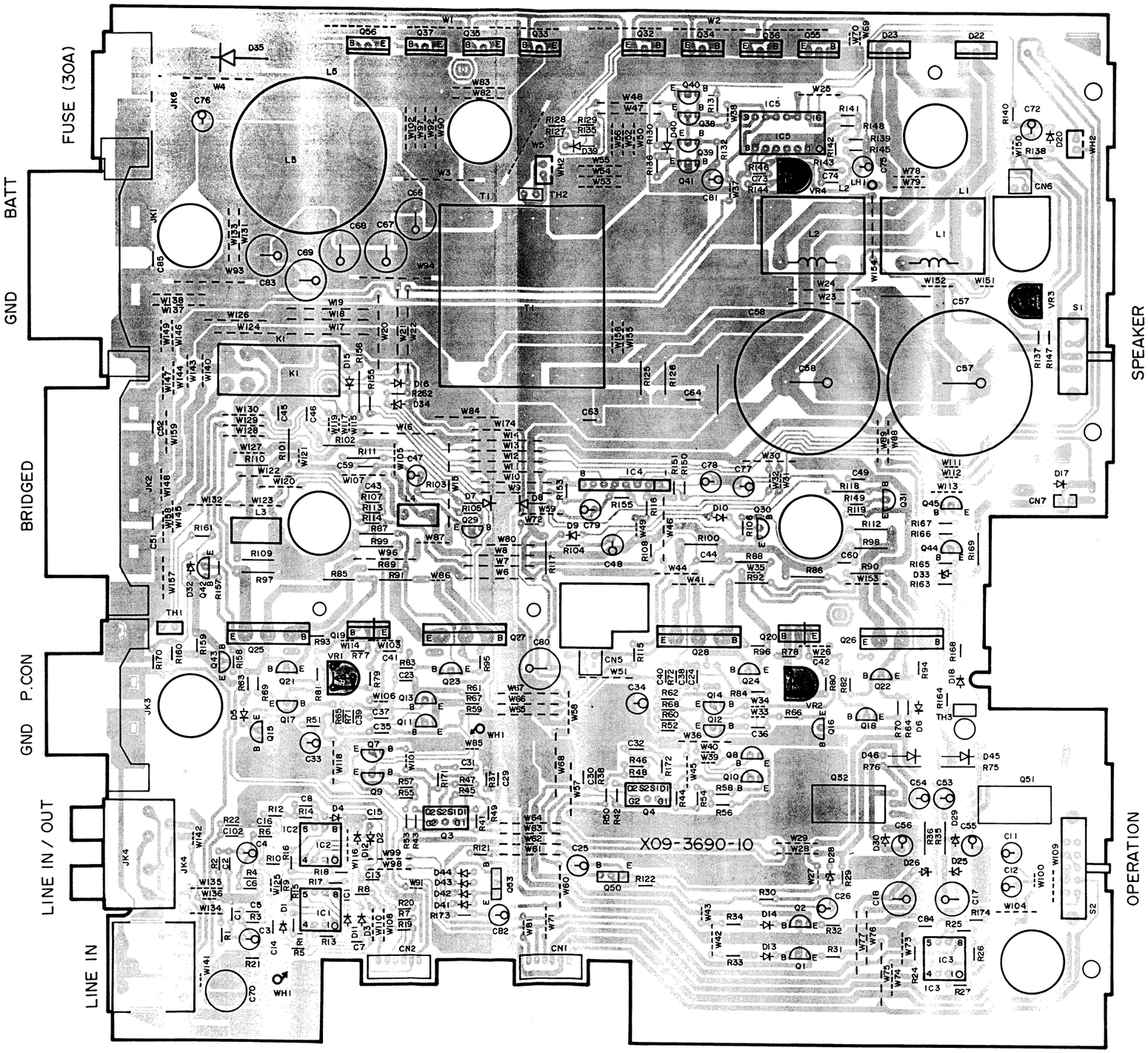
Ref. No.		Address
IC	Q	
	1	6D
	2	6D
	3	6F
	4	5E
	7	5G
	8	5E
	9	5G
	10	5E
	11	5F
	12	5E
	13	5F
	14	5E
	15	5G
	16	5D
	17	5G
	18	5D
	19	5G
	20	5D
	21	5G
	22	5D
	23	5F
	24	5E
	25	5G
	26	5D
	27	5F
	28	5E
	29	4F
	30	4D
	31	4D
	32	1E
	33	1F
	34	1E
	35	1F
	36	1D
	37	1F
	38	2E
	39	2E
	40	2E
	41	2E
	42	4H
	43	5H
	44	4C
	45	4C
	50	6E
	51	6C
	52	6D
	53	6F
	55	1D
	56	1G
1		6G
2		6G
3		6C
4		4E
5		2D
6		1G

Refer to the schematic diagram for the values of resistors and capacitors.

PC BOARD (Foil Side View)

Audio unit (X09-3690-10) K, M TYPE

Ref. No.		Address
IC	Q	
	1	6Q
	2	6Q
	3	6O
	4	6P
	7	5O
	8	5Q
	9	5O
	10	5Q
	11	5O
	12	5Q
	13	5O
	14	5Q
	15	5N
	16	5Q
	17	5N
	18	5R
	19	5O
	20	5Q
	21	5N
	22	5R
	23	5O
	24	5Q
	25	5N
	26	5R
	27	5O
	28	5Q
	29	4O
	30	4Q
	31	4R
	32	1P
	33	1P
	34	1Q
	35	1O
	36	1Q
	37	1O
	38	2Q
	39	2Q
	40	2Q
	41	2Q
	42	4N
	43	5N
	44	4R
	45	4R
	50	6P
	51	6O
	52	6O
	53	6P
	55	1Q
	56	1O
1		6N
2		6N
3		6R
4		4P
5		2Q



Refer to the schematic diagram for the values of resistors and capacitors.

IC1, 2	: μPC4570C	Q1, 2, 38, 39, 43,	: 2SC945 (A) (Q, P)	Q19, 20	: 2SC3419	Q29, 30	: 2SC1845 (F, E)	Q45	: 2SC3940A (R, S)
IC3	: NJM4558D	Q3, 4	: 2SK389	Q21, 22	: 2SC2590 (Q, R)	Q32, 33, 34~37, 55, 56	: IRFIZ34	Q50	: DTA124EFF
IC4	: μPC1237HA	Q7~10, 31	: 2SA992 (F, E)	Q23, 24	: 2SA1110 (Q, R)			Q51	: 2SD1266BD (Q, P)
IC5	: μPC494C	Q11~16	: 2SC2631 (Q, R)	Q25, 26	: 2SC4886	Q40, 41, 44	: 2SA733 (A) (Q, P)	Q52	: 2SB941BD (Q, P)
		Q17, 18	: 2SA1123 (Q, R)	Q27, 28	: 2SA1860	Q42	: 2SA1534A (R, S)	Q53	: DTC124EFF

D1~6, 9~18, 20, 41~44	: 1SS176
D7, 8	: 1S2076A
D22	: FMU22S
D23	: FMU22R
D25, 26	: RD16JS (B)

X09-369X-XX

K, M (0~10) TYPE

PROTECTION

IC4

OVER LOAD DET.
OFFSET VOL. DET
FLIP-FLOP
VCC MUTE
AC DET
RELAY RECOVERY LATCH SW

JK4 Lch RCA IN Rch

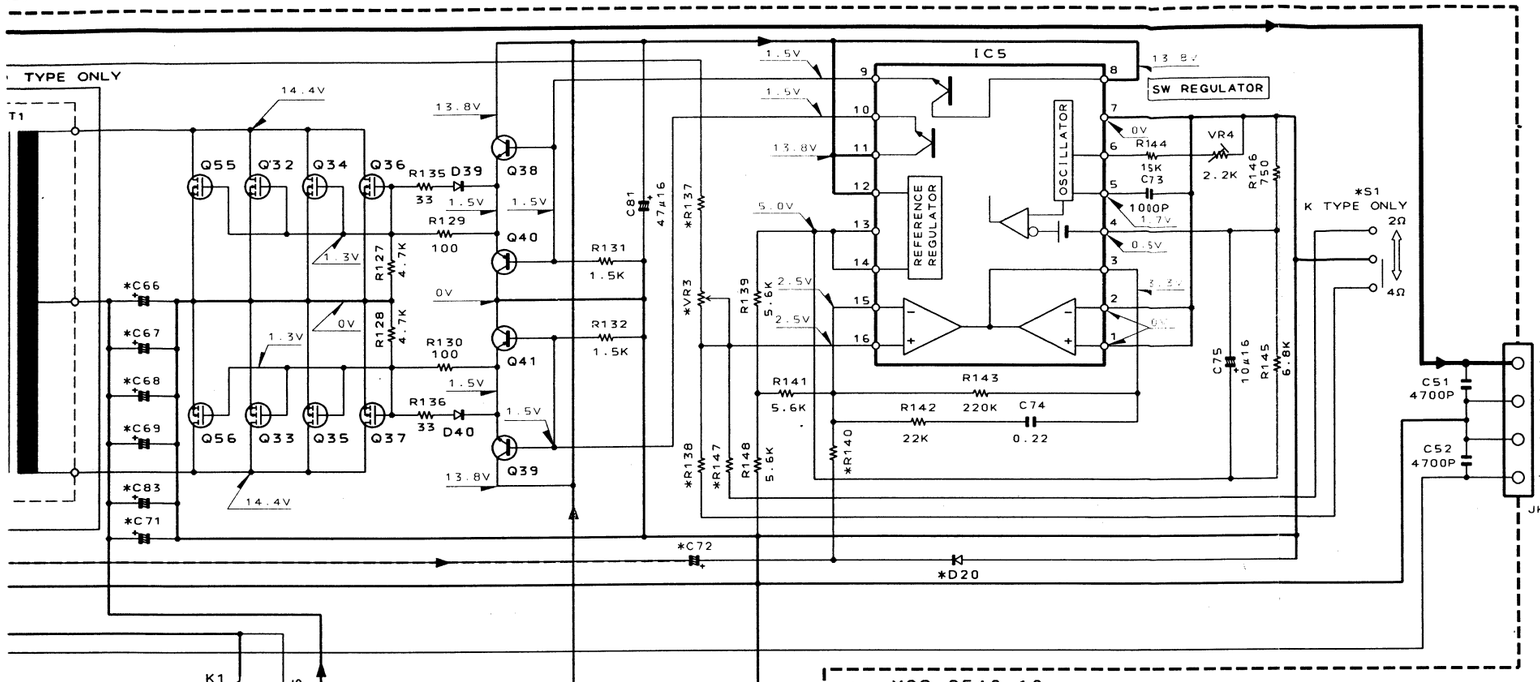
CN5 *CN6 CN2 CN1

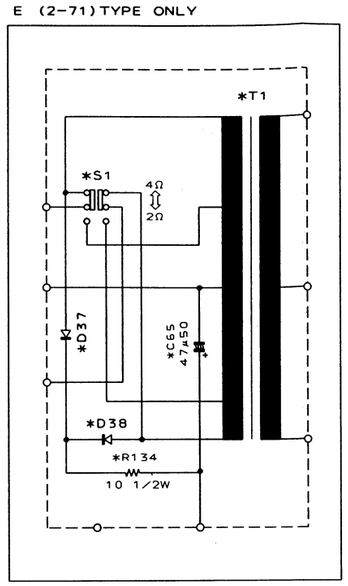
X09-369X-XX

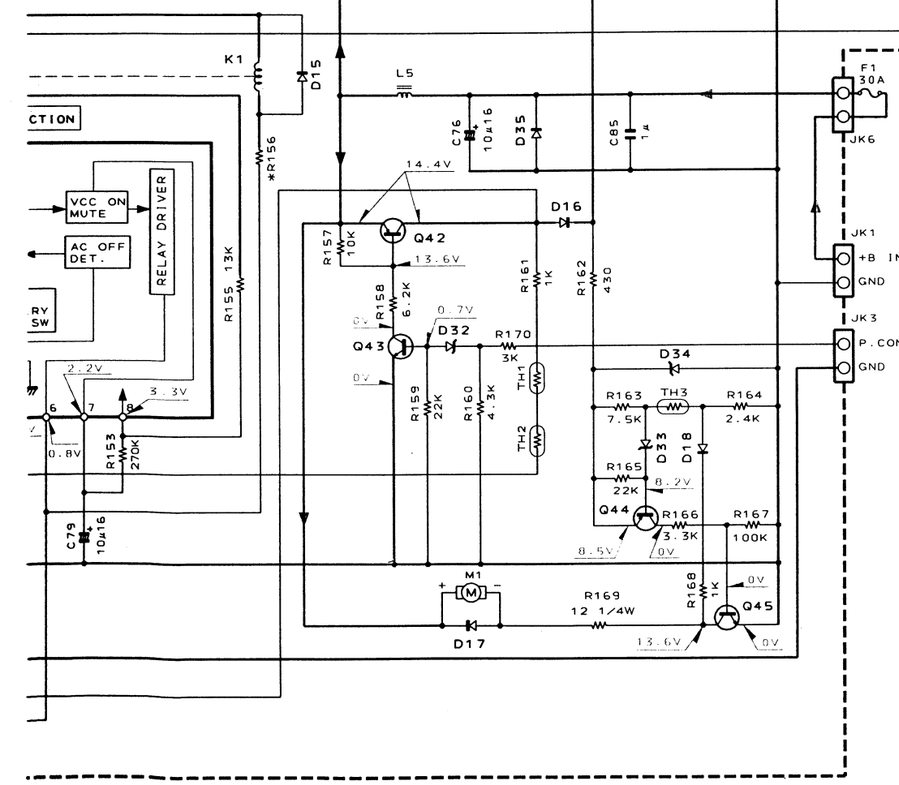
DESTINATION \ Ref.NO		L1, 2	C57, 58	C65	C66~69, 83	C71	C72	R134	R137	R138	R140	R147	R156	VR161	VR3
0~10	K, M	L33-0990-05	8200μ42	NO	1000μ16	NO	3.3μ50	NO	18K	1.5K 1%	100K	1.8K	470 1W	1K	4.7K
2~71	E	NO	4700μ50	47μ50	NO	4700μ16	NO	10 1/2W	NO	NO	NO	NO	680 1W	3K	NO

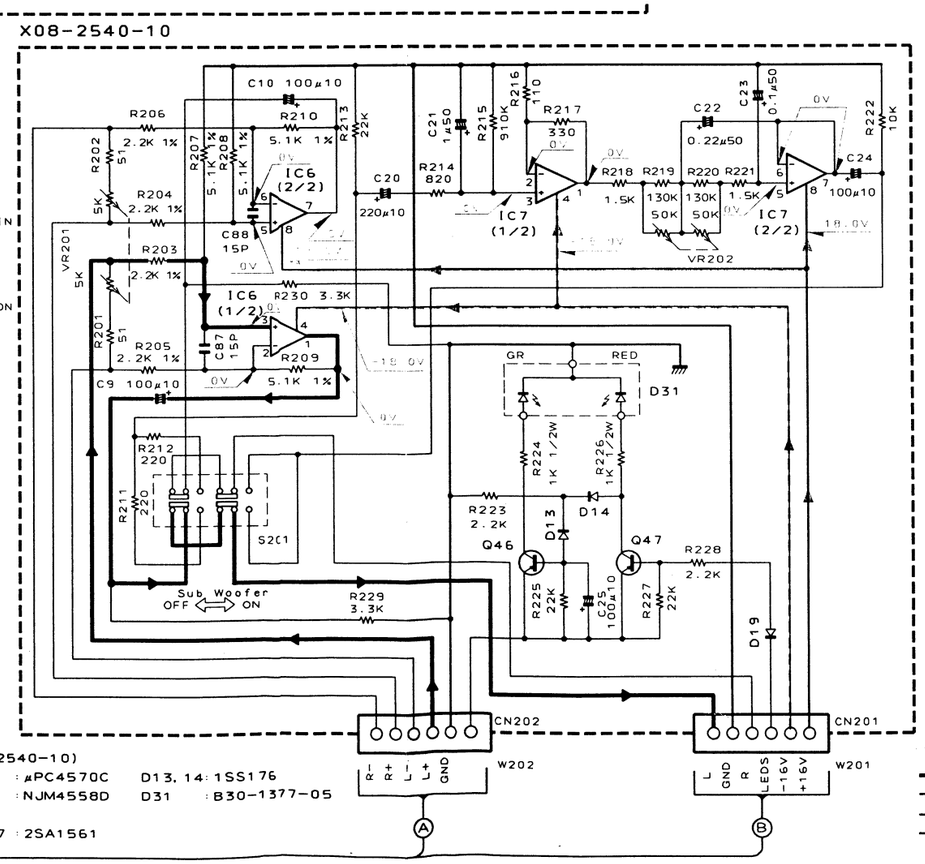
K	L	M	N	O	P	Q	R	S	T	U

D28, 32, 33 : RD5.1JS (B2)
D29, 30 : RD20JS (B)
D34 : RD8.2JS (B2)
D35 : RM4AMLF-J1
(B) D39, 40 : EH1Z
D45, 46 : E-152







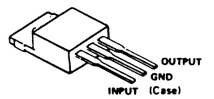


VR3	D20	D37.38	CN6	S1	T1
4.7K	1SS176	NO	E40-3881-05	S31-2130-05	L19-0525-05
NO	NO	EH1Z	NO	S62-0815-05	L19-0526-05

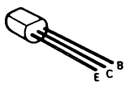
(X08-2540-10)
IC6 : μPC4570C
IC7 : NJM4558D
D13, 14 : 1SS176
D31 : B30-1377-05
Q46, 47 : 2SA1561

SIGNAL LINE
GND LINE
+B LINE
-B LINE

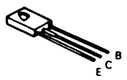
RD5.1JS
1SS176



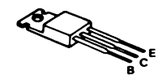
2SA1123
2SA1534A
2SA733 (A)
2SA992
2SC1845
2SC2631
2SC3940A
2SC945 (A)



2SA1110
2SC2590



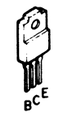
2SB941BD



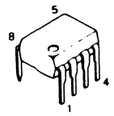
DTA124EFF
DTC124EFF

2SC3419

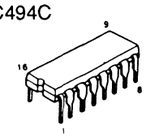
2SD1266BD



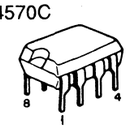
NJM4558D



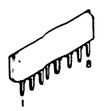
UPC494C



UPC4570C



UPC1237HA



CAUTION: For continued safety, replacesafety critical components only with manufacturer's recommended parts (refer parts list). ⚠ Indicates safety critical components. To reduce the risk of electric shock, leakage-current or resistance measurements shall be carried out (exposed parts are acceptably insulated from the supply circuit) before the appliance is returned to the customer.

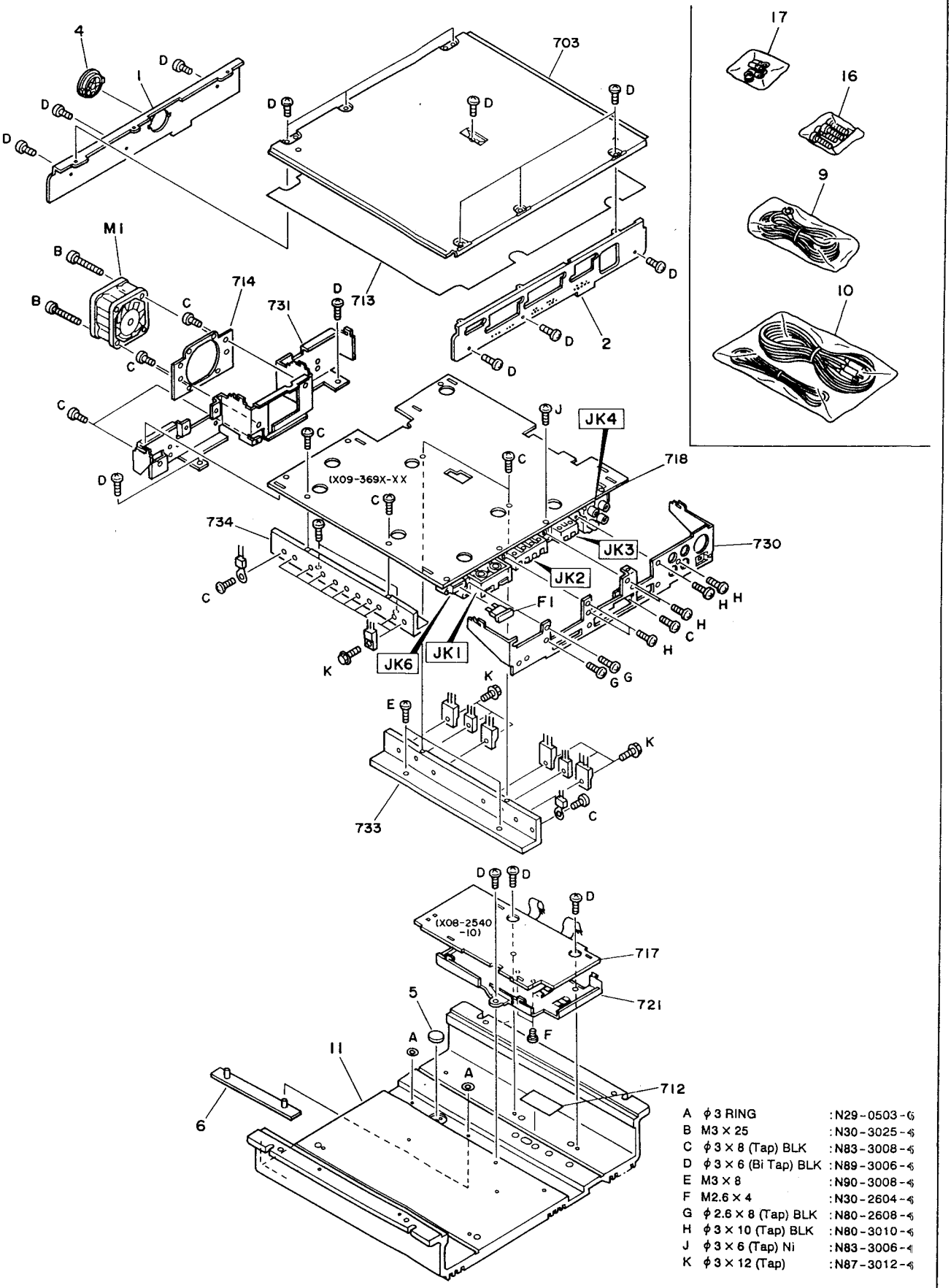
DC voltages are as measured with a high impedance voltmeter with no signal input. Values may vary slightly due to variations between individual instruments orand units.

Les tensions c.c. doivent être mesurées avec un voltmètre à haute impédance sans signal d'entrée. les valeurs peuvent différer légèrement du fait des variations inhérentes aux appareils et aux instruments de mesure individuels.

Die angegebenen Gleichspannungswerte wurden mit einem hochohmigen Spannungsmesser ohne Eingangssignal gemessen. Dabei schwanken die Meßwerte aufgrund von Unterschieden zwischen einzelnen Instrumenten oder Geräten u. geringfügig.

KAC-9
KENWO

EXPLODED VIEW



A	φ3 RING	:N29-0503-6
B	M3 × 25	:N30-3025-4
C	φ3 × 8 (Tap) BLK	:N83-3008-4
D	φ3 × 6 (Bi Tap) BLK	:N89-3006-4
E	M3 × 8	:N90-3008-4
F	M2.6 × 4	:N30-2604-4
G	φ2.6 × 8 (Tap) BLK	:N80-2608-4
H	φ3 × 10 (Tap) BLK	:N80-3010-4
J	φ3 × 6 (Tap) Ni	:N83-3006-4
K	φ3 × 12 (Tap)	:N87-3012-4

Parts with the exploded numbers larger than 700 are not supplied.

KAC-923

PARTS LIST

* New Parts
Parts without Parts No. are not supplied.
Les articles non mentionnes dans le Parts No. ne sont pas fournis.
Telle ohne Parts No. werden nicht geliefert.

Ref. No. 参照番号	Address 位置	New Parts 新	Parts No. 部品番号	Description 部品名／規格	Destination 仕向	Remarks 備考
KAC-923						
1	1A	*	A20-7837-03	PANEL ASSY	KM	
1	1A	*	A20-7838-03	PANEL ASSY	E	
2	1B	*	A23-5057-03	REAR PANEL		
4	1A		B07-2028-14	ESCUTCHEON		
5	3A	*	B19-0907-04	LIGHTING BOARD		
-			B46-0100-20	WARRANTY CARD		
-			B58-1210-04	CAUTION CARD		
-		*	B59-0707-00	SUB-INSTRUCTION MANUAL	M	
-		*	B64-0187-00	INSTRUCTION MANUAL	KM	
-		*	B64-0188-00	INSTRUCTION MANUAL	E	
⚠ 9	1B	*	E30-3804-05	DC CORD ASSY (CRITICAL)	EM	
10	1B		E30-3954-05	AUDIO CORD	M	
11	3A,3B	*	F01-1404-01	HEAT SINK		
F1	2B		F05-3033-05	FUSE (30A)		
M1	1A		F09-1208-05	FAN		
-		*	H01-9428-04	ITEM CARTON CASE	KM	
-		*	H01-9431-04	ITEM CARTON CASE	E	
-		*	H03-3499-04	OUTER CARTON CASE		
-			H10-4416-02	POLYSTYRENE FOAMED FIXTURE		
-			H25-0321-04	PROTECTION BAG (600X315X0.03)		
-			H25-0336-04	PROTECTION BAG (170X250X0.03)		
16	1B	*	N99-1577-15	SCREW SET		
A	3A	*	N29-0503-05	RETAINING RING (3)		
B	1A		N30-3025-46	PAN HEAD MACHIN SCREW		
C	1A,2B		N83-3008-45	PAN HEAD TAPTITE SCREW		
D	1A,1B		N89-3006-45	BINDING HEAD TAPTITE SCREW		
E	2A		N90-3008-46	PAN HEAD MACHIN SCREW		
17	1B	*	W01-0720-05	ACCESSORY	EM	
PREAMPLIFIER UNIT (X08-2540-10)						
D31		*	B30-1377-05	LED		
C9 ,10			CE04CW1A101M	ELECTRO 100UF 10WV		
C20			CE04CW0J221M	ELECTRO 220UF 6.3WV		
C21			C90-2608-05	ELECTRO 1.0UF 50WV		
C22			C90-2604-05	ELECTRO 0.22UF 50WV		
C23			C90-2602-05	ELECTRO 0.1UF 50WV		
C24 ,25			CE04CW1A101M	ELECTRO 100UF 10WV		
F	3B		N30-2604-46	PAN HEAD MACHIN SCREW		
R203-206			R92-2102-05	METAL FILM 2.2K D 1/6W		
R207-210			R92-2103-05	METAL FILM 5.1K D 1/6W		
VR201			R10-2622-05	POTENTIOMETER(5K)		
VR202			R10-4645-05	POTENTIOMETER(50K)		
S201			S62-0810-05	SLIDE SWITCH		
D13 ,14			1SS176	DIODE		
IC6			UPC4570C	IC(OP AMP X2)		
IC7			NJM4558D	IC(OP AMP X2)		
Q46 ,47			2SA1561	TRANSISTOR		

E: Scandinavia & Europe K: USA P: Canada W: Europe
U: PX(Far East, Hawaii) T: England M: Other Areas
UE: AAFES(Europe) X: Australia

⚠ indicates safety critical components.

PARTS LIST

* New Parts
Parts without Parts No. are not supplied.
Les articles non mentionnes dans le Parts No. ne sont pas fournis.
Telle ohne Parts No. werden nicht geliefert.

Ref. No. 参照番号	Address 位置	New Parts 新	Parts No. 部品番号	Description 部品名／規格	Destination 仕向	Remarks 備考
AUDIO UNIT (X09-369X-XX) 0-10: KM, 2-71: E						
C1 ,2			CK45FB1H102K	CERAMIC 1000PF K		
C3 ,4			CE04DW1C100M	ELECTRO 10UF 16WV		
C5 ,6			CC45FSL1H221J	CERAMIC 220PF J		
C7 ,8			CC45SL1H151J	CERAMIC 150PF J		
C11 ,12			CE04DW1C100M	ELECTRO 10UF 16WV		
C13 -16			CK45FB1H222K	CERAMIC 2200PF K		
C17 ,18			CE04DW1E221M	ELECTRO 220UF 25WV		
C23 ,24			CC45FSL1H080D	CERAMIC 8.0PF D		
C29 ,30			CF92FV1H102J	MF 1000PF J		
C31 ,32			CF92FV1H472J	MF 4700PF J		
C33 ,34			CE04DW1A101M	ELECTRO 100UF 10WV		
C35 ,36			CC45FSL1H271J	CERAMIC 270PF J		
C37 ,38			CC45FSL1H050C	CERAMIC 5.0PF C		
C39 ,40			CC45FSL1H060D	CERAMIC 6.0PF D		
C41 ,42			CF92FV1H102J	MF 1000PF J		
C43 ,44			CC45FSL1H331J	CERAMIC 330PF J		
C45 ,46			CF92FV1H473J	MF 0.047UF J		
C47 ,48			CE04DW1E4R7M	ELECTRO 4.7UF 25WV		
C49			CK45FB1H102K	CERAMIC 1000PF K		
C51 ,52			CF92FV1H472J	MF 4700PF J		
C53 ,54			CE04DW1H010M	ELECTRO 1.0UF 50WV		
C55 ,56			CE04DW1E220M	ELECTRO 22UF 25WV		
C57 ,58			C90-1618-05	ELECTRO 4700UF 50WV	E	
C57 ,58		*	C90-2772-05	ELECTRO 8200UF 50WV	KM	
C63 ,64			CF92FV1H272J	MF 2700PF J		
C65		*	C90-2724-05	ELECTRO 47UF 50WV	E	
C66 -69			C90-2660-05	ELECTRO 1000UF 16WV	KM	
C70			C90-2576-05	NP-ELECT 330UF 16WV		
C71		*	C90-2690-05	ELECTRO 4700UF 16WV	E	
C72			CE04DW1H3R3M	ELECTRO 3.3UF 50WV	KM	
C73			CF92FV1H102J	MF 1000PF J		
C74			CF92FV1H224J	MF 0.22UF J		
C75 ,76			CE04DW1C100M	ELECTRO 10UF 16WV		
C77			CE04DW1H2R2M	ELECTRO 2.2UF 50WV		
C78			CE04DW1A101M	ELECTRO 100UF 10WV		
C79			CE04DW1C100M	ELECTRO 10UF 16WV		
C80			CE04DW1H221M	ELECTRO 220UF 50WV		
C81			CE04DW1C470M	ELECTRO 47UF 16WV		
C82			CE04DW1H220M	ELECTRO 22UF 50WV		
C83			C90-2660-05	ELECTRO 1000UF 16WV	KM	
C102			CF92FV1H473J	MF 0.047UF J		
JK1			E70-0804-05	SCREW TERMINAL BOARD(PWR)		
JK2			E20-0479-05	SCREW TERMINAL BOARD(4P)(SP)		
JK3			E20-0239-05	SCREW TERMINAL BOARD(2P)(P.C.)		
JK4			E13-1401-05	PHONO JACK		
⚠ JK6		*	J13-0601-05	FUSE HOLDER (CRITICAL)		
L1 ,2		*	L33-0990-05	CHOKE COIL	KM	
L3 ,4			L39-0085-05	PHASE-COMPENSATION COIL		
L5		*	L33-0991-05	CHOKE COIL		
T1		*	L19-0525-05	TRANSFORMER FOR CONVERTER	KM	
T1		*	L19-0526-05	TRANSFORMER FOR CONVERTER	E	

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KAC-923

PARTS LIST

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Ref. No. 参照番号	Address 位置	New Parts 新	Parts No. 部品番号	Description 部品名／規格	Destination 仕向	Remarks 備考
C	2B		N83-3008-45	PAN HEAD TAPTITE SCREW		
G	2B		N80-2608-45	PAN HEAD TAPTITE SCREW		
H	2B		N80-3010-45	PAN HEAD TAPTITE SCREW		
J	1B		N83-3006-41	PAN HEAD TAPTITE SCREW		
K	2A		N87-3012-46	BRAZIER HEAD TAPTITE SCREW		
R7 ,8			R92-2101-05	METAL FILM 1K D 1/6W		
R15 -18			R92-2102-05	METAL FILM 2.2K D 1/6W		
R19 ,20			R92-2101-05	METAL FILM 1K D 1/6W		
R35 ,36			RD14DB2H101J	SMALL-RD 100 J 1/2W		
R75 ,76			RD14DB2H100J	SMALL-RD 10 J 1/2W		
R85 -88			RD14DB2H101J	SMALL-RD 100 J 1/2W		
R97 -100			R92-0205-05	METAL-PLATE 0.1 K 2W		
R101,102			RD14DB2H100J	SMALL-RD 10 J 1/2W		
R109,110			RD14DB2H100J	SMALL-RD 10 J 1/2W		
R117			RD14DB2H100J	SMALL-RD 10 J 1/2W		
R125,126			RD14DB2H100J	SMALL-RD 10 J 1/2W		
R134			RD14DB2H100J	SMALL-RD 10 J 1/2W	E	
R156			RS14KB3A471J	FL-PROOF RS 470 J 1W	KM	
R156			RS14KB3A681J	FL-PROOF RS 680 J 1W	E	
VR1 ,2			R12-0092-05	TRIMMING POT.(220 ｵｰﾑ)		
VR3			R12-1069-05	TRIMMING POT.(4.7K ｵｰﾑ)	KM	
K1			S76-0804-05	MAGNETIC RELAY		
S1			S31-2130-05	SLIDE SWITCH	KM	
S1		*	S62-0815-05	SLIDE SWITCH	E	
S2		*	S62-0814-05	SLIDE SWITCH		
D1 -6			1SS176	DIODE		
D7 ,8			1S2076A	DIODE		
D9 -18			1SS176	DIODE		
D20			1SS176	DIODE	KM	
D22			FMU22S	DIODE		
D23			FMU22R	DIODE		
D25 ,26			RD16JS(B)	ZENER DIODE		
D28			RD5.1JS(B2)	ZENER DIODE		
D29 ,30			RD20JS(B)	ZENER DIODE		
D32 ,33			RD5.1JS(B2)	ZENER DIODE		
D34			RD8.2JS(B2)	ZENER DIODE		
D35			RM4AMLF-J1	DIODE		
D37 -40			EH1Z	DIODE	E	
D39 ,40			EH1Z	DIODE	KM	
D41 -44			1SS176	DIODE		
D45 ,46			E-152	DIODE		
IC1 ,2			UPC4570C	IC(OP AMP X2)		
IC3			NJM4558D	IC(OP AMP X2)		
IC4			UPC1237HA	IC(POWER AMP)		
IC5			UPC494C	IC(SWITCHING REGULATOR)		
Q1 ,2			2SC945(A)(Q,P)	TRANSISTOR		
Q3 ,4			2SK389	TRANSISTOR		
Q7 -10			2SA992(F,E)	TRANSISTOR		
Q11 -16			2SC2631(Q,R)	TRANSISTOR		
Q17 ,18			2SA1123(Q,R)	TRANSISTOR		
Q19 ,20			2SC3419	TRANSISTOR		
Q21 ,22			2SC2590(Q,R)	TRANSISTOR		
Q23 ,24			2SA1110(Q,R)	TRANSISTOR		
Q25 ,26		*	2SC4886	TRANSISTOR		

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Q27 ,28		*	2SA1860	TRANSISTOR		
Q29 ,30			2SC1845(F,E)	TRANSISTOR		
Q31			2SA992(F,E)	TRANSISTOR		
Q32 -37		*	IRFIZ34	FET		
Q38 ,39			2SC945(A)(Q,P)	TRANSISTOR		
Q40 ,41			2SA733(A)(Q,P)	TRANSISTOR		
Q42			2SA1534A(R,S)	TRANSISTOR		
Q43			2SC945(A)(Q,P)	TRANSISTOR		
Q44			2SA733(A)(Q,P)	TRANSISTOR		
Q45			2SC3940A(R,S)	TRANSISTOR		
Q50			DTA124EFF	DIGITAL TRANSISTOR		
Q51			2SD1266BD(Q,P)	TRANSISTOR		
Q52			2SB941BD(Q,P)	TRANSISTOR		
Q53			DTC124EFF	DIGITAL TRANSISTOR		
Q55 ,56		*	IRFIZ34	FET		
TH1 ,2		*	PTH9M04BC222T	POSITIVE RESISTOR		
TH3		*	ERTD2FHL103S	THERMISTOR		

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KAC-923

SPECIFICATIONS

K, M TYPE

[Audio section]

Max Power Output (4 ohm)
Normal ..... 220 W + 220 W
Rated Power Output at 12 V** (4 ohm)
** Normal (20 Hz ~ 20 kHz, less than 0.05% THD) ..... 100 W + 100 W
Bridged (1 kHz, less than 0.3% THD) ..... 270 W
Rated Power Output (2 ohm)
Normal (1 kHz, less than 0.3% THD) ..... 135 W + 135 W
Frequency Response (– 3 dB) ..... 2 Hz ~ 45 kHz
Sensitivity (rated output) MAX. ..... 0.15 V
MIN. ..... 3.0 V
Signal to Noise Ratio ..... 105 dB
Input Impedance ..... 10 kΩ
Damping Factor (100 Hz) ..... More than 200
Low Pass Filter Frequency ..... 30 ~ 200 Hz (variable)

[General]

Operating Voltage ..... 12.0 V (11 ~ 16 V allowable)
Current Consumption (MAX.) ..... 30 A
Dimensions (W × H × D) ..... 273 × 56 × 250 mm
(10 × 3/4 × 2-3/16 × 9-13/16 in.)
Weight ..... 4.1 kg (9.0 lb)

E TYPE

[Audio section]

Max Power Output (4 ohm) Normal ..... 200 W + 200 W
Bridged ..... 480 W
Rated Power Output (4 ohm)
Normal (20 Hz ~ 20 kHz, less than 0.05% THD) ..... 100 W + 100 W
Bridged (1 kHz, less than 0.3% THD) ..... 250 W
Rated Power Output (2 ohm)
Normal (1 kHz, less than 0.3% THD) ..... 125 W + 125 W
Frequency Response (– 3 dB) ..... 2 Hz ~ 45 kHz
Sensitivity (rated output) MAX. ..... 0.15 V
MIN. ..... 3.0 V
Signal to Noise Ratio ..... 105 dB
Input Impedance ..... 10 kΩ
Damping Factor (100 Hz) ..... More than 200
Low Pass Filter Frequency ..... 30 ~ 200 Hz (variable)

[General]

Operating Voltage ..... 14.4 V (11 ~ 16 V allowable)
Current Consumption (MAX.) ..... 30 A
Dimensions (W × H × D) ..... 273 × 56 × 250 mm
Weight ..... 4.1 kg

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